SHORT COMMUNICATIONS

TAXONOMIC STATUS OF THE VICTORIAN FOSSIL WHALE, *ZIPHIUS (DOLICHODON) GEELONGENSIS* McCOY 1882

Frederick McCoy (1882) based *Ziphius* (*Dolichodon*) *geelongensis* on a supposed mandibular tooth of a beaked whale (Family Ziphiidae, Suborder Odontoceti). The holotype and only described specimen is now curated as NMV P7464, National Museum of Victoria, Melbourne. It was collected by either Mr Legge, Mr Price, or Mr Nelson, from 'Waurn Ponds Quarries", near Geelong, Victoria, Australia (grid reference about BT611682 (1:100 000 map, Series R 652, Sheet 7721, Geelong) or about 38°16'S, 144°16'E). The holotype almost certainly came from the Waurn Ponds Member of the Jan Jue Formation (Torquay Group), which Abele *et al.* (1976, fig. 13) indicated is of Late Oligocene to earliest Miocene age. The description of the specimen given by McCoy (1882) obviates the need for discussion of all but a few morphological details, below. Collection details of the holotype were outlined by Mahoney and Ride (1975).

DISCUSSION

McCoy believed the holotype of *Z. geelongensis* to be a mandibular tooth similar to those of the extant strap-toothed whale, *Mesoplodon layardi* (Gray 1865) (Ziphiidae) as shown, for example, by Gray (1865, fig. b) and McCann (1962, fig. 5a).Presumably, for this reason, Chapman (1917, p. 32) employed the combination *Mesoplodon geelongensis*. Unlike these authors, however, I believe the holotype to be a fragment of bone, probably rib. Haversian canals are seen in a thin section of a fragment of the specimen, and there is no trace of enamel or dentine prisms. While most of the element is dense and compact, macroscopic vacuities like those of cancellous bone are present near the axis at both ends of the element. These are not evident in McCoy's figures (1882, pl. 69). Although teeth of adult ziphiids often lack an enamel crown and do not retain an open pulp cavity at the apical end of the tooth when the more basal part of the cavity is occluded (e.g. Flower 1872, Christensen 1973, fig. 2), McCoy (1882, p. 25) assumed the "crown" (enamel?) to have "surmounted the large pulp cavity on the outer face of the distal end". McCoy stated that the surface consists of a very thin layer of cement, but none is identifiable, and the surface layer appears to be weathered bone. Finally, there is no evidence, in section, of occlusion of the axial "pulp cavity" by layers of cementum which, in other odontocetes, form axially concentric rings.

It is impossible to ascertain to which taxon the undiagnostic holotype should be referred, although its large size, anteroposterior flattening, and the occurrence of other cetacean bones in the Waurn Ponds Limestone Member indicate that it is probably a cetacean. Thus, I suggest that the name *Ziphius* (*Dolichodon*) *geelongensis* McCoy 1882 is a *nomen dubium* and that it should be allowed to lapse. This suggestion is unlikely to affect even the more obscure aspects of cetacean systematics for the species has received little mention in literature. It has been mentioned only occasionally in local literature (e.g. Tate 1888, p. 247, Hall & Pritchard 1894, p. 185, Dennant & Kitson 1903, Gregory 1914, Mulder 1914, Richards 1922, Mahoney & Ride 1975, p. 163), and this supposed record of *Ziphius* and *Mesoplodon* was not included in standard lists of fossil and recent cetacean taxa (e.g. Kellogg 1928, Simpson 1945, Romer 1966).

REFERENCES

Abele, C., Gloe, C. S., Hocking, J. B., Holdgate, G., Kenley, P. R., Lawrence, C. R., Ripper, D. & Threlfall, W. F., 1976. Tertiary. 177-274. *In* DOUGLAS, J. G. & FERGUSON, J. A. (Eds.). Geology of Victoria. *Geol. Soc. Aust., Spec. Publ.* 5. 528 p.

Chapman, F., 1917. New or little-known Victorian fossils in the National Museum. Part XXI. Some Tertiary cetacean remains. *Proc. R. Soc. Vict.* 30: 32-43.

Christensen, I., 1973. Age determination, age distribution and growth of bottlenose whales, *Hyperoodon ampullatus* (Forster), in the Labrador Sea. *Norw. J. Zool.* 21: 331-340.

Dennant, J., & Kitson, A. E., 1903. Catalogue of the described species of fossils (except Bryozoa and Foraminifera) in the Cainozoic fauna of Victoria, South Australia and Tasmania. *Rec. Geol. Surv. Vict.* 1: 87-147.

Flower, W. H., 1872. On the recent ziphioid whales, with a description of the skeleton of *Berardius arnouxi*. *Trans Zool. Soc. Lond.* 8: 203-234.

Gray, J. E., 1865. Notes on the whales of the Cape; By E. L. Layard, Esq., of Cape-Town, Corr. Memb. With descriptions of two new species. *Proc. Zool. Soc. Lond.* 1865: 357-359.

Gregory, J. W., 1914. The correlation of the Australian marine Kainozoic deposits—evidence of the echinoids, bryozoa, and some vertebrates. *Rep. Brit. Assoc. Adv. Sci., Australia* 84: 376.

Hall, T. S. & Pritchard, G. B., 1894. The older Tertiaries of Maude, with an indication of the sequence of the Eocene rocks of Victoria. *Proc. R. Soc. Vict.* 7: 180-196.

Kellogg, A. R., 1928. The history of whales—their adaptation to life in the water. *Quart. Rev. Biol.* 3: 29-76, 174-208.

McCann, C., 1962. Key to the Family Ziphiidae. Beaked whales. *Tuatara* 10: 13-18.

McCoy, F., 1882. *Ziphius* (*Dolichodon*) *geelongensis* (McCoy). *Prodromus of the palaeontology of Victoria; or, figures and descriptions of Victorian organic remains*, Decade 7: 23-26.

Mahoney, J. A., & Ride, W. D. L., 1975. Index to the genera and species of fossil Mammalia described from Australia and New Guinea between 1838 and 1968 (including citations of type species and primary type specimens). *W. Aust. Mus. Spec. Publ.* 6. 250 p.

Mulder, J. F., 1914. Notes on the Waurn Ponds Limestone fossil beds. *Geelong Nat. (ser. 2)* 6: 23-26.

Richards, H. C., 1922. Post-Cretaceous rocks of Australia. *Proc. Pan-Pacific Sci. Congr., Bernice P. Bishop Mus., Honolulu, Spec. Publ.* 7: 744-753.

Romer, A. S., 1966. *Vertebrate Paleontology* (3rd Edn.) Univ. of Chicago Press, Chicago. 468 p.

Simpson, G. G., 1945. The principles of classification and a classification of mammals. *Bull. Amer. Mus. Nat. Hist.* 85: 1-350.

Tate, R., 1888. Census of the fauna of the older Tertiary of Australia. *J. Proc. R. Soc. N.S.W.* 22: 240-253.

R. Ewan Fordyce
Dept. of Earth Sciences
Monash University,
Clayton, Victoria 3168